

## **ABSTRACT**

### **EFFECT OF THE SIMULATOR CNC 2 AXIS MEDIA AGAINST LEARNING OUTCOMES OF CNC BASIC ON STUDENT IN SMK ISLAM YOGYAKARTA**

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The purpose of this research are: (1) to know the difference in learning outcomes of study CNC basic on student between experimental group who used the Simulator CNC 2 Axis and the control group who did not use the learning media in SMK Islam Yogyakarta and (2) to know the effect of using Simulator CNC 2 Axis media to student against the learning outcomes of CNC basic in SMK Islam Yogyakarta.

This research is using quasi-experimental approach with pretest-posttest, non-equivalent control group design. This research conducted in SMK Islam Yogyakarta. Subject of this research are student in XI class department of mechanical engineering consist of 2 (two) class, experimental class (XI A) and control class (XI B). Treatment given to experimental class by giving learning with Simulator CNC 2 Axis media, while on the control class study done by the conventional method. Data collection performed by using the instrument with program CNC 2 Axis test given before learning/pretest and after/posttest. Data analysis techniques using descriptive analysis techniques includes: mode, median, mean, varians, standard deviation and analysis hypothesis test with correlation Product Moment and regression equation.

The results of research shows that learning outcomes of the student in SMK Islam Yogyakarta on basic CNC lesson after get learning using Simulator CNC 2 Axis media the average value get 78,28 while student are taught by conventional method the average value get 74,78. From the results of regression analysis we can get regression equation  $Y' = 16,24 - 0,61X$  and from hypothesis testing by using correlation Product Moment with a significance level 5%;  $r_{\text{count}} > r_{\text{table}}$  ( $0,64 > 0,468$ ). The coefficient determinant ( $r^2$ ) is 0,4096 it can give effect Simulator CNC 2 Axis media against learning outcomes CNC basic is 40,96% and the residual is 59,04% influenced the other factor, such as: facilities and infrastructure, conditions of the students, and the learning process. Basic of that research result, conclusions can be drawn that effect of Simulator CNC 2 Axis media can improve the learning outcomes CNC basic for the student.

**Keyword:** media, Simulator, CNC 2 Axis, learning outcomes, CNC basic.